Volume 182 1989

Table of contents

No. 1 1–208 issued on June 1, 1989
No. 2 209–476 issued on June 15, 1989
No. 3 477–738 issued on July 1, 1989

Corrections 737

Review

Nucleo-mitochondrial interactions in yeast mitochondrial biogenesis
L. A. Grivell 477–493

Nucleic acids, protein synthesis and molecular genetics

A novel role for aminoacyl-tRNA synthetases in the regulation of polypeptide chain initiation
J. W. Pollard, A. R. Galpine and M. J. Clemens 1– 9

Méthionyl-tRNA synthétase du germe de blé — Effet d'une protéase endogène et corrélations entre caractéristiques structurales et propriétés catalytiques
J. Archambault de Vençay 37– 43

Analysis of genomic clones of the murine U1RNA-associated 70-kDa protein reveals a high evolutionary conservation of the protein between human and mouse
H. Hornig, U. Fischer, M. Costas, A. Rauh and R. Lührmann 45– 50

Isolation and characterization of a rat liver alkaline phosphatase gene — A single gene with two promoters
Y. Toh, M. Yamamoto, H. Endo, Y. Misumi and Y. Ikehara 231–237

The effect of light on the biosynthesis of leaf-specific thionins in barley, *Hordeum vulgare*
U. Reimann-Philipp, S. Behnke, A. Batschauer, E. Schäfer and K. Apel 283–289

Effect of spermine on the efficiency and fidelity of the codon-specific binding of tRNA to the ribosomes
T. Naranđa and Ž. Kućan 291–297

Photofootprinting of drug-binding sites on DNA using diazo- and azido-9-aminoacridine derivatives
C. Jeppesen and P. E. Nielsen 437–444

Probing the environment of lanthanide binding sites in yeast $tRNA^{Phe}$ by specific metal-ion-promoted cleavages
J. Ciesiołka, T. Marciniec and W. J. Krzyżosiak 445–450

Alternative occupancy of a dual ribosomal binding site by mRNA affected by translation initiation factors
M. A. Canonaco, C. O. Gualerzi and C. L. Pon 501–506

The human lysozyme gene — Sequence organization and chromosomal localization
C. W. B. Peters, U. Kruse, R. Pollwein, K.-H. Grzeschik and A. E. Sippel 507–516

The nuclear-coded chloroplast 22-kDa heat-shock protein of *Chlamydomonas* — Evidence for translocation into the organelle without a processing step
B. Grimm, D. Ish-Shalom, D. Even, H. Glaczinski, P. Ottersbach, I. Ohad and K. Kloppstech 539–546

The expression and purification of human rhinovirus protease 3C
J. A. Knott, D. C. Orr, D. S. Montgomery, C. A. Sullivan and A. Weston 547–555

The effect of oligonucleotides complementary to the 3′ end of the 16S rRNA on the formation of the bacterial 30S initiation complex
V. Eckert, A. Kyriatsoulis and H. G. Gassen 557–562

Molecular cloning of preproacrosin and analysis of its expression pattern in spermatogenesis
I. M. Adham, U. Klemm, W.-M. Maier, S. Hoyer-Fender, S. Tsaousidou and W. Engel 563–568

Conformational analysis of brominated pA2′-5′A2′-5′A analogs — An NMR and model-building study
Y. Th. van den Hoogen, C. M. A. Hilgersom, D. Brozda, K. Lesiak, P. F. Torrence and C. Altona 629–637

Expression of muscle-specific proteins is necessary to regulate translation of the mRNA for a 40-kDa housekeeping polypeptide in rat L6 cells
S. K. Pramanik and J. Bag 687–698

Protein chemistry and structure

Isolation and characterization of hagfish thyroid iodoprotein by its non-thyroglobulin nature, very high iodine and carbohydrate contents and low hormone/iodine ratio
Y. Ohmiya, S. Suzuki and Y. Kondo 11– 18

EPR study of the redox interactions in cytochrome c_3 from *Desulfovibrio vulgaris* Miyazaki
H. Benosman, M. Asso, P. Bertrand, T. Yagi and J.-P. Gayda 51– 55

The effects of multiple amino acid substitutions on the polypeptide backbone of tuna and horse cytochromes *c*
Y. Gao, A. D. J. Lee, R. J. P. Williams and G. Williams 57– 65

Isolation of the flavodehydrogenase domain of *Hansenula anomala* flavocytochrome b_2 after mild proteolysis by an *H. anomala* proteinase
J. Celerier, Y. Risler, J. Schwencke, J.-M. Janot and M. Gervais 67– 75

Isolation and structure of two novel 6-kDa dimeric peptides from the *corpora cardiaca* of the insect *Locusta migratoria* — Molecular mass determination by mass spectrometry
H. Hietter, B. Luu, F. Goltzene, D. Zachary, J. Hoffmann and A. Van Dorsselaer 77–84

The sequence-specific assignment of the ^{1}H-NMR spectrum of an enzyme, horse-muscle acylphosphatase
V. Saudek, J. Boyd, R. J. P. Williams, M. Stefani and G. Ramponi 85–93

The influence of tryptophan on mobility of residues in the *trp* repressor of *Escherichia coli*
A. N. Lane 95–104

The primary structure of rat ribosomal protein S10
A. Glück, Y.-L. Chan, A. Lin and I. G. Wool 105–109

The evolution of lysozyme and α-lactalbumin
K. Nitta and S. Sugai 111–118

Functional analysis of the signal-sequence processing site of yeast acid phosphatase
M. Monod, R. Haguenauer-Tsapis, I. Rauseo-Koenig and A. Hinnen 213–221

Analysis of the biotin-binding site on acetyl-CoA carboxylase from rat
D.-H. Bai, T.-W. Moon, F. López-Casillas, P. C. Andrews and K.-H. Kim 239–245

Structure-function relationships of elongation factor Tu — Isolation and activity of the guanine-nucleotide-binding domain
M. Jensen, R. H. Cool, K. K. Mortensen, B. F. C. Clark and A. Parmeggiani 247–255

Biochemical and theoretical approach to localization of metal-ion binding sites in the actin primary structure
H. Strzelecka-Gołaszewska, G. Boguta, S. Zmorzyński and J. Moraczewska 299–305

Glutamic acid 71 and aspartic acid 66 control the binding of the second calcium ion in porcine pancreatic phospholipase A_2
C. J. Van den Bergh, A. C. A. P. A. Bekkers, H. M. Verheij and G. H. De Haas 307–313

Primary structure of spinach-chloroplast thioredoxin f — Protein sequencing and analysis of complete cDNA clones for spinach-chloroplast thioredoxin f
M. Kamo, A. Tsugita, C. Wiessner, N. Wedel, D. Bartling, R. G. Herrmann, F. Aguilar, L. Gardet-Salvi and P. Schürmann 315–322

Chemical characterization of $p17^{gag}$ from human immunodeficiency virus as an N-terminally myristoylated protein
C. Goddard, A. Aquino, R. I. Glazer and R. L. Felsted 323–326

Correlation between internal motion and emission kinetics of tryptophan residues in proteins
T. Kouyama, K. Kinosita Jr and A. Ikegami 517–521

Sequence and characterization of the sperm-specific protein φ3 from *Mytilus californianus*
J. Ausio and R. McParland 569–576

Purification and partial characterization of 1-aminocyclopropane-1-carboxylate synthase from tomato pericarp
D. Van Der Straeten, L. Van Wiemeersch, H. M. Goodmann and M. Van Montagu 639–647

Chains and fragments of tetanus toxin — Separation, reassociation and pharmacological properties
U. Weller, M. E. Dauzenroth, D. Meyer zu Heringdorf and E. Habermann 649–656

Mapping of four discontiguous antigenic determinants on horse cytochrome *c*
M. Oertle, K. Immergluck, Y. Paterson and H. R. Bosshard 699–704

Enzymology

Mechanism of interaction of citrate synthase with citryl-CoA
G. Pettersson, U. Lill and H. Eggerer 119–124

Covalent cofactor binding to flavoenzymes requires specific effectors
R. Brandsch and V. Bichler 125–128

Purification and characterisation of bovine brain protein kinase C isotypes α, β and γ
R. M. Marais and P. J. Parker 129–137

Evidence for an *O*-glycan sialylation system in brain — Characterization of a β-galactoside α2,3-sialyltransferase from rat brain regulating the expression of an α-*N*-acetylgalactosaminide α2,6-sialyltransferase activity
H. Baubichon-Cortay, P. Broquet, P. George and P. Louisot 257–265

The complex of actin and deoxyribonuclease I as a model system to study the interactions of nucleotides, cations and cytochalasin D with monomeric actin
B. Polzar, E. Nowak, R. S. Goody and H. G. Mannherz 267–275

A novel L-glutamate oxidase from *Streptomyces endus* — Purification and properties
A. Böhmer, A. Müller, M. Passarge, P. Liebs, H. Honeck and H. G. Müller 327–332

Characterization of crystalline formate dehydrogenase from *Candida methanolica*
Y. Izumi, H. Kanzaki, S. Morita, H. Futazuka and H. Yamada 333–341

Antibodies directed against phosphothreonine residues as potent tools for studying protein phosphorylation
D. Heffetz, M. Fridkin and Y. Zick 343–348

Nitrilase of *Rhodococcus rhodochrous* J1 — Purification and characterization
M. Kobayashi, T. Nagasawa and H. Yamada 349–356

Spectral and kinetic studies of phosphate and magnesium ion binding to yeast inorganic pyrophosphatase
I. N. Smirnova, A. S. Shestakov, E. B. Dubnova and A. A. Baykov 451–456

Human gastric lipase — The N-terminal tetrapeptide is essential for lipid binding and lipase activity
S. Bernbäck and L. Bläckberg 495–499

Reaction of fluorescein isothiocyanate with an ATP-binding site on the phosphorylase kinase α subunit
N. Zaman, M. Varsányi, L. M. G. Heilmeyer Jr, T. G. Sotiroudis, C. M. Johnson and J. W. Crabb 577–584

Glutamate:4,5-dioxovaleric acid transaminase from *Euglena gracilis* – Kinetic studies
M. E. Lombardo, L. S. Araujo, A. A. Juknat and A. M. del C. Batlle 657–660

Purification of cytochrome-*c* oxidase retaining its pulsed form
U. Brandt, H. Schägger and G. von Jagow 705–711

Rapid partial degradation of DDT by a cytochrome *P*-450 model system
H. Langen, T. Epprecht, M. Linden, T. Hehlgans, B. Gutte and H. R. Buser 727–735

Carbohydrates, lipids and other natural products

Structures of *O*-glycosidically linked oligosaccharides isolated from human meconium glycoproteins
C. Capon, Y. Leroy, J.-M. Wieruszeski, G. Ricart, G. Strecker, J. Montreuil and B. Fournet 139–152

Identification of 3-deoxy-*manno*-2-octulosonic acid, 3-deoxy-5-*O*-methyl-*manno*-2-octulosonic acid and 3-deoxy-*lyxo*-2-heptulosaric acid in the cell wall (theca) of the green alga *Tetraselmis striata* Butcher (Prasinophyceae)
B. Becker, K. Hård, M. Melkonian, J. P. Kamerling and J. F. G. Vliegenthart 153–160

Primary structure of twenty three neutral and monosialylated oligosaccharides *O*-glycosidically linked to the human secretory immunoglobulin A hinge region determined by a combination of permethylation analysis and 400-MHz ^{1}H-NMR spectroscopy
A. Pierce-Crétel, J.-P. Decottignies, J.-M. Wieruszeski, G. Strecker, J. Montreuil and G. Spik 457–476

Tumor necrosis factor stimulates human neutrophils to release leukotriene B_4 and platelet-activating factor – Induction of phospholipase A_2 and acetyl-CoA:1-alkyl-*sn*-glycero-3-phosphocholine O_2-acetyltransferase activity and inhibition by antiproteinase
G. Camussi, C. Tetta, F. Bussolino and C. Baglioni 661–666

Physical and inorganic biochemistry

Serum albumin binding of palmitate and stearate – Multiple binding theory for insoluble ligands
R. Brodersen, H. Vorum, E. Skriver and A. O. Pedersen 19– 25

Correlation of pause sites in MDV-1 RNA replication with kinetic refolding of the growing chain – A Monte Carlo simulation of the Markov process
A. Fernández 161–163

Spectroscopic characterization of the nickel and iron-sulphur clusters of hydrogenase from the purple photosynthetic bacterium *Thiocapsa roseopersicina* – 1. Electron spin resonance spectroscopy
R. Cammack, C. Bagyinka and K. L. Kovacs 357–362

Spectroscopic characterization of the nickel and iron-sulphur clusters of hydrogenase from the purple photosynthetic bacterium *Thiocapsa roseopersicina* – 2. Electron spin-echo spectroscopy
R. Cammack, K. L. Kovacs, J. McCracken and J. Peisach 363–366

Direct electron transfer of redox proteins at the bare glassy carbon electrode
W. R. Hagen 523–530

Conformational transmission in condensed lipid model compounds – Chain packing modification by head-group-induced conformational changes in the glyceryl backbone
G. H. W. M. Meulendijks, J. W. De Haan, M. H. P. Van Genderen and H. M. Buck 531–538

Membranes and bioenergetics

Circular dichroic spectroscopy of membrane haemoproteins – The molecular determinants of the dichroic properties of the *b* cytochromes in various ubiquinol:cytochrome *c* reductases
M. Degli Esposti, G. Palmer and G. Lenaz 27– 36

The rotational diffusion of chloroplast phosphate translocator and of lipid molecules in bilayer membranes
R. Wagner, E. C. Apley, A. Gross and U. I. Flügge 165–173

Endothelin binding sites in porcine aortic and rat lung membranes
S. M. Kanse, M. A. Ghatei and S. R. Bloom 175–179

The peptide antibiotic subtilin acts by formation of voltage-dependent multi-state pores in bacterial and artificial membranes
F. Schüller, R. Benz and H.-G. Sahl 181–186

Effect of hydrophobic sulphydryl reagents on the uncoupling protein and inner-membrane anion channel of brown-adipose-tissue mitochondria
E. Rial, I. Aréchaga, E. Sainz-de-la-Maza and D. G. Nicholls 187–193

Biosynthetic studies of several of the nuclear-encoded subunits of mammalian NADH dehydrogenase
G. M. Gibb and C. I. Ragan 367–372

The ATP/ADP-antiporter is involved in the uncoupling effect of fatty acids on mitochondria
A. Y. Andreyev, T. O. Bondareva, V. I. Dedukhova, E. N. Mokhova, V. P. Skulachev, L. M. Tsofina, N. I. Volkov and T. V. Vygodina 585–592

The coupling between protonmotive force and the NAD(P)$^+$ transhydrogenase in chromatophores from photosynthetic bacteria
N. P. J. Cotton, T. M. Lever, B. F. Nore, M. R. Jones and J. B. Jackson 593–603

Solubilisation of methane monooxygenase from *Methylococcus capsulatus* (Bath)
D. D. S. Smith and H. Dalton 667–671

Composition of the ternary protein complex of the red cell membrane cytoskeleton
A. Pekrun, J. C. Pinder, S. A. Morris and W. B. Gratzer 713–717

Metabolism and metabolic regulation

Ethanol-induced inhibition of leukotriene degradation by ω-oxidation
T. Baumert, M. Huber, D. Mayer and D. Keppler 223–229

On the regulatory significance of inhibitors acting on non-equilibrium enzymes in the Calvin photosynthesis cycle
G. Pettersson and U. Ryde-Pettersson 373–377

Insulin-induced dephosphorylation of hormone-sensitive lipase — Correlation with lipolysis and cAMP-dependent protein kinase activity
P. Strålfors and R. C. Honnor 379–385

Stimulation by insulin of glycolysis in cultured hepatocytes is attenuated by extracellular ATP and puromycin through purine-dependent inhibition of phosphofructokinase 2 activation
I. Pröbst, A. Quentmeier, C. Schweickhardt and K. Unthan-Fechner 387–393

Triacylglycerol synthesis in cultured rat hepatocytes — The rate-limiting role of diacylglycerol acyltransferase
N. Mayorek, I. Grinstein and J. Bar-Tana 395–400

Mathematical modelling of metabolic pathways affected by an enzyme deficiency — Energy and redox metabolism of glucose-6-phosphate-dehydrogenase-deficient erythrocytes
R. Schuster, G. Jacobasch and H.-G. Holzhütter 605–612

Characterization of trehalose-6-phosphate synthase and trehalose-6-phosphate phosphatase of *Saccharomyces cerevisiae*
A. Vandercammen, J. François and H.-G.Hers 613–620

Signal transduction and molecular neurobiology

Phosphorylation/dephosphorylation of the β light chain of clathrin from rat liver coated vesicles
J. E. Loeb, B. Cantournet, J.-P. Vartanian, J. Goris and W. Merlevede 195–202

Monoclonal antibodies to protein kinase C — Functional relationship between epitopes and cofactor binding sites
S. Cazaubon, R. Marais, P. Parker and A. D. Strosberg 401–406

A novel inositol-phospholipid-specific phospholipase C — Rapid purification and characterization
E. Meldrum, M. Katan and P. Parker 673–677

Molecular cell biology

Different membrane-bound forms of acetylcholinesterase are present at the cell surface of hepatocytes
A. Perelman and E. Brandan 203–207

Calcium chelator Quin 2 prevents hydrogen-peroxide-induced DNA breakage and cytotoxicity
O. Cantoni, P. Sestili, F. Cattabeni, G. Bellomo, S. Pou, M. Cohen and P. Cerutti 209–212

The influence of substoichiometric concentrations of myosin subfragment 1 on the state of aggregation of actin under depolymerizing conditions
E. Grazi, E. Magri and L. Rizzieri 277–282

The effects of acetylated low-density lipoproteins on fluid-phase pinocytosis by macrophages
M. E. Knowles and D. S. Leake 407–412

Terminal β-D-galactofuranosyl epitopes recognized by antibodies that inhibit *Trypanosoma cruzi* internalization into mammalian cells
M. V. De Arruda, W. Colli and B. Zingales 413–421

Impact of altered protein structures on the intracellular traffic of a mutated vasopressin precursor from Brattleboro rats
H. Schmale, B. Borowiak, H. Holtgreve-Grez and D. Richter 621–627

A B-type PDGF receptor lacking most of the intracellular domain escapes degradation after ligand binding
L. Severinsson, L. Claesson-Welsh and C.-H. Heldin 679–686

Down-regulation of α3(VI) chain expression by γ-interferon decreases synthesis and deposition of collagen type VI
M. Heckmann, M. Aumailley, A. Hatamochi, M.-L. Chu, R. Timpl and T. Krieg 719–726

Developmental biochemistry and immunology

Insect immunity. Isolation of cDNA clones corresponding to diptericin, an inducible antibacterial peptide from *Phormia terranovae* (Diptera) — Transcriptional profiles during immunization
J.-M. Reichhart, M. Essrich, J.-L. Dimarcq, D. Hoffmann, J. A. Hoffmann and M. Lagueux 423–427

Insulin antagonism of dexamethasone induction of tyrosine aminotransferase in cultured fetal hepatocytes — A correlation between enzyme activity, synthesis, level of messenger RNA and transcription
M. H. Cake, K. K. W. Ho, L. Shelly, E. Milward and G. C. T. Yeoh 429–435

Indexed in *Current Contents*